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DEPARTMENT OF THE ARMY  
HEADQUARTERS 45TH ENGINEER GROUP (CONSTRUCTION)  
APO 96238

EGD-CO

15 November 1966

SUBJECT: Operational Report-Lessons Learned (RCS CSFOR-65), for Quarterly Period Ending 31 October 1966

THRU: Commanding General  
18th Engineer Brigade  
APO 96307

Commanding General  
United States Army, Vietnam  
ATTN: AVC-DH  
APO 96307

Commander In Chief  
United States Army, Pacific  
ATTN: CROP-MH  
APO 96558

TO: Assistant Chief of Staff for Force Development  
Department of the Army (ACSFOR DA),  
Washington, D.C. 20310

Section 1. Significant Organization or Unit Activities.

1. During the period 1 August to 31 October 1966, the following units were attached to 45th Engineer Group:

- a. 14th Engineer Battalion (Combat) (Cmbt)
- b. 20th Engineer Battalion (Combat) (Cmbt)
- c. 39th Engineer Battalion (Combat) (Cmbt)
- d. 577th Engineer Battalion (Construction) (Const)
- e. 513th Engineer Company (Dump Truck) (DT)

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*Chief of Staff for Force Dev.*  
*Officer in Charge, O.T.-RD*  
*U.S. Army, D.C. 20310*

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- f. 553d Engineer Company (Float Bridge) (FB)
- g. 572d Engineer Company (Light Equipment) (LE)
- h. 584th Engineer Company (Light Equipment) (LE)
- i. 588th Engineer Detachment (Well Drilling)

2. The 20th Engineer Battalion (.. Company B) was under the Operational Control of 937th Engineer Group from 10 October until 31 October 1966.

3. On 21 October 1966, on arrival in REPUBLIC OF VIETNAM (RVN), the 14th Engineer Battalion (Cmbt) was attached to 45th Engineer Group.

4. This report will include only activities of Headquarters, 45th Engineer Group, 572d Engineer Company and 553d Engineer Company as the assigned Battalions and separate companies attached to them will submit separate reports.

5. During the period of 1 August - 4 October the 45th Engineer Group (Const) was responsible for all non-divisional troop construction and Engineer Combat Support in that portion of VIETNAM bounded on the north by latitude  $13^{\circ}15'$  and on the south by a line formed along the western and southern boundary at DARLAC PROVINCE, the western boundary of KHAN HOA PROVINCE and the  $12^{\circ}$  latitude eastward to the South China Sea (with certain exceptions in vicinity of NHU TRUNG). On 4 October 1966 the border was altered to include the area from BQ 8065 on latitude  $13^{\circ}15'$  to BQ 9080 and then eastward to the sea on gridline 80.

6. During the period 1 August - 15 October 1966, Headquarters, 45th Engineer Group was located at DONG BA THIN. Because of a shift in the center of Group activity, the Headquarters moved to vicinity TUY HOA on 15 October.

7. Operations during the reporting period were centered around the Republic of KOREA Army (ROKA) areas at NHU TRUNG, TUY HOA, NINH HOA and DONG BA THIN and UNITED STATES (US) areas at CAM RANH, TUY HOA, BAN ME THUOT, PHU TUC, DONG BA THIN, and VUNG RO.

- a. The 14th Engineer Battalion arrived in RVN with only red and yellow TAT. Because of shipping delays, equipment of the 14th did not arrive in country during the reporting period.
- b. The 20th Engineer Battalion's primary efforts were devoted to Standard 2 cantonment construction at NINH HOA and NHU TRUNG for the ROKA, at BAN ME THUOT for US Forces, and construction at PHU TUC of a C-130 airfield. On 10 October the 20th Engineer Battalion (-) was placed

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under Operational Control (OPCON) of 937th Engineer Group. For 9 days in October, a company of the 20th was committed as Infantry in a defensive role in support of 1/101 Airborne Division.

c. The 39th Engineer Battalion concentrated its efforts on Operational Support of the 1/101 Airborne Division and the 1/4 Infantry Division and construction of a new Port Facility at VUNG RO.

(1) This facility is the first port built in a virgin territory by US Forces in RVN. It includes, at present, a barge off loading facility and two LST ramps, and will be expanded during December to include an 80' x 600' Dolong Pier Complex.

(2) On 16 October the facility was formally opened and dedicated as PORT JANE by Lt General Stanley R. Larson, First Field Forces, VIETNAM (IFFV) Commander and Maj General R. R. Plogor, Commanding General, 18th Engineer Brigade, in memory of the late Lt Colonel E. E. Lane, former commander of the 39th Engineer Battalion who was killed in an aerial reconnaissance of the VUNG RO Area.

d. The 577th Engineer Battalion devoted its primary efforts to DONG BA THIN and the construction of the first phases of a 400 Bed ROKA Evacuation Hospital at NHA TRANG and a 4500 Man US Replacement Center at CAM RANH BAY.

e. The 513th Engineer Company (DT) was attached to the 577th Engineer Battalion during the reporting period and in addition to supporting activities of the 577th Engineer Battalion, it provided direct support to the Army of the Republic of VIETNAM (ARVN) Engineer Forces in the expansion of MSR HL-1 vic NHA TRANG. In October, the 513th Engineer Company conducted the first "TODDRUNNER" Operation on Highway QL-1 from NINH HOA to TUY HOA.

f. The 553d Engineer Company (FB) was attached to the 39th Engineer Battalion during the period 1 August - 19 October, and was under Group control for the remainder of the reporting period. Primary activity of the 553d Engineer Company included maintenance of 793 foot float/trestle bridge on MSR QL-1 vic TUY HOA and the provision of light tactical raft and pneumatic assault boat support to tactical units.

g. The 572d Engineer Company (LE) was attached to the 39th Engineer Battalion during the period 1 August - 19 October and provided general Engineer support throughout the entire period.

h. The 584th Engineer Company (LE) was attached to and provided equipment support to the 20th Engineer Battalion during the reporting period.

i. The 586th Engineer Detachment (GB) (Well Drilling) was assigned and carried out well drilling missions in the NINH HOA area during the reporting period.

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8. During the entire reporting period 45th Engineer Group was fully operational and provided support to Free World Military Assistance Forces in its area of responsibility. On 16 and 17 October, 45th Engineer Group displaced from DONG BI THIN to TUY HOA. This move was made by air and sea. Major operational elements were moved by C-123 while the Headquarters Company moved by LST. No abnormal delays were experienced during this move.

9. Throughout the reporting period 45th Engineer Group (Const) supervised the operations of two Combat Battalions and participated in the planning and executing of major tactical operations. In RVN there are no lines separating the COMZ from the Combat Zone; and the distinction, in this case, between a "Combat" and a "Construction" Group is not particularly meaningful or useful. Mission assignments and the tactical environments have dictated modification to the Table of Organization and Equipment (TOE) of both the Combat and Construction Groups. In Counter-insurgent warfare, where Base Development/Civic Action are meshed with Combat/Operational Support, distinctions in designation and differences in TOE are resolved by modifications in the field. Although modified TOE have prepared for specific situations, these modified TOE do not reflect an overall study of the situation. Acknowledgment should be made of the hybrid status of both units and consideration given in TOE reviews to necessary permanent modifications and the creation of an "Engineer Group."

## Section 2, Part I, Observations (Lessons Learned).

### INDIGENOUS PERSONNEL/PERSONNEL

#### ITEM: Use of Indigenous Personnel in Quarry Operations

DISCUSSION: The tremendous demand for crushed rock in VIETNAM dictates the necessity for 24 hour operation of rock crushers. As the TOE provides only the number of personnel required for one shift operation, to operate on 24 hour basis the quarry sections must be augmented. With only a minimum amount of training Aid in Kind (AIK) personnel have proven extremely skilled as powder men and rock drill helpers. Given the incentive of learning a job that could be of future value, approximately 50% of the hired in these positions develop job efficiency comparable to American personnel within two or three weeks.

OBSERVATION: When properly motivated and trained, indigenous personnel prove to be an adequate source of additional semi-skilled labor.

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SUBJECT: Operational Report-Lessons Learned (ICs CSFOR-65), for Quarterly Period Ending 31 October 1966

ROTATIONAL LOSS/PERSONNEL

ITEM: Rotational Loss Problems

DISCUSSION: This Group has under its control 2 Engineer battalions which departed CONUS on the same day in December 1965. These 2 battalions will lose approximately 717 Enlisted men and 33 Officers in December 1966. To offset the excessive turnover a 4 point program was initiated with a goal of reducing December rotation to 25% of the battalion's strength:

1. Assigning a slight overstrength (10%).
2. Curtailment of December rotations into November to reduce the administrative load (10% curtailment).
3. Voluntary and involuntary extensions of 10% of persons to January or later.
4. Interchange of personnel with other units in October and November.

OBSERVATION: Strong measures must be taken to avoid crippling a battalion's operational capability during its rotation month. Commanders at Brigade and Group level should insure that such a program is carried out. Battalion and Company commanders do not have the resources or inclination to do so.

MAIL/PERSONNEL

ITEM: Mail Delivery

DISCUSSION: When a person is in the hospital or isolated from his unit, mail plays an especially important part in morale. A program to make unit commanders consciously aware of their responsibility in getting mail to these units through use of all available means of transportation was initiated and has proven successful.

EDCSA/PERSONNEL

ITEM: Difference Between Arrival and EDCS. Dates

DISCUSSION: Individuals assigned directly from outside RVN to units in RVN are often given EDCS. dates months in advance of their arrival in country. This results in statistical unit overstrengths and an improper overall impression of a unit's capability.

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SUBJECT: Operational Report-Lessons Learned (ICB CSFR-65), for Quarterly Period Ending 31 October 1966

OBSERVATION: Individuals should be assigned to a unit on arrival in RVN. This would permit strength and accountability figures to remain closer to actuality and would present a more sound impression of a unit's actual condition.

#### INADEQUATE COMMUNICATIONS/OPERATIONS

ITEM: Shortage of Communication Capability

DISCUSSION: Upon arrival in country the communication capability of this Headquarters was found to be inadequate. The subordinate units were scattered and telephone communications were marginal when available. The submission of routine reports was primarily by courier. At that time this Headquarters requested and received approval for the issue of 4 AN/GRC-26D radio teletype systems. Since that time the subordinate units have become more widely dispersed and the submission of routine reports has become an increasing problem.

OBSERVATION: A radio-teletype net in the Group would greatly increase the efficiency of the Group and its communications system. This Headquarters has an approved radio-teletype net but has been unable to obtain issue of the needed radio sets.

#### CRUSHER OPERATION/OPERATIONS

ITEM: Crusher Operations

DISCUSSION: Because of the shortage of repair parts at this theater it is advisable to operate the rock crusher only when it can be used at close to 100% effectiveness. If sufficient rock drilling and loading equipment is not available to feed the crusher at full capacity then blast rock should be stockpiled until the quantity on hand allows a minimum of one shift operation at full capacity.

OBSERVATION: Due to short operation times and difficulty of obtaining repair parts, crusher should be operated only when there is sufficient rock on hand to operate the crusher for at least 1 complete shift.

#### MOUNTED DRILLS/OPERATIONS

ITEM: Effectiveness of Wagon Drills as Compared to Track Mounted Rock Drills

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DISCUSSION: The track mounted rock drill has proven to be 200% to 400% as effective as the older wagon drill. This is particularly true in the opening of a new quarry where initial operation is over extremely rough terrain. The larger diameter of the bore hole, faster drilling and comparable ease of movement from one drilling location to the next are the primary factors in the track drill's high efficiency.

OBSERVATION: Because of greatly increased effectiveness track drills should be the primary item of equipment provided for quarry drilling.

#### QUARRY SITE/OPERATIONS

ITEM: Selection of Quarry Sites

DISCUSSION: Selection of the best available quarry site is the single most important factor in a successful quarry operation. Accurate guidance as to amount of rock needed and schedule of delivery is of high importance. The quarry site must be selected with the specific mission in mind, as a site with tremendous potential may require excessive effort to properly open, whereas another site with less potential may provide a sufficient volume of rock for the job at hand with only minimum preparation. All sites must be evaluated with the effect of the monsoon season in mind.

OBSERVATION: Amount of rock needed and difficulty in opening quarry should be considered when choosing a quarry site.

#### CONCRETE OPERATIONS/OPERATIONS

ITEM: 16-S Concrete Mixer Operations With Use of NIK Laborers

DISCUSSION: Vietnamese laborers were used to good advantage in feeding a 16-S concrete mixer the required ingredients by use of the following tool: An "A-Frame" measuring and dumping device was constructed to eliminate heavy manual labor required to lift boxes and dump them in skip. Basically the structure consisted of a 2 cubic foot volume box with a chute. The box is mounted slightly off center of gravity hanging on a 1" pipe which is supported by an A-frame. By lifting an attached handle the box pivots with enclosed material and discharges into the 16-S mixer.

OBSERVATION: With a minimum amount of physical effort the slight physical structured Vietnamese people can easily feed the mixer with the necessary amount of measuring materials provided by the accurately calibrated volume box.

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15 November 1966

SUBJECT: Operational Report-Lessons Learned (ACCS CSFOR-65), for Quarterly Period Ending 31 October 1966

#### AIRCRAFT SUPPORT/OPERATIONS

ITEM: Lack of Aviation Support

DISCUSSION: The TOE aviation section (3 aircraft) of the Engineer Group (Combat) has been deleted by General Order. Neither the TOE section or the in-theater augmentation is sufficient to fill the major aircraft requirements of an Engineer Group in RVN. With subordinate units widely scattered adequate command and control can only be accomplished with an adequate number of aircraft immediately responsive to the commander. In addition, aircraft are required for resupply or rations, repair parts, as well as morale items such as mail.

OBSERVATION: The TOE of the Engineer Group (Combat) authorizes 12 aircraft, a minimum number to support Group activities. This TOE strength should be authorized in Construction Group.

#### CONVOY SECURITY/OPERATIONS

ITEM: Convoy security With Non-Infantry Units

DISCUSSION: With adequate training and appropriate armament, non-Infantry units can be used to provide required security for convoy moves through hostile territory. Engineer units drilled in counter ambush techniques and properly armed with TOE weapons, have provided very adequate security for movement on non-tactical convoys.

OBSERVATION: In a theater where unit movements are many times restricted by lack of security forces, non-Infantry units should be used to provide their own security for such moves.

#### NIGHT OPERATIONS/OPERATIONS

ITEM: Non-tactical Unit Night Operations

DISCUSSION: Because of the heavy demands placed on Engineer resources in RVN it is almost a necessity that critical equipment be worked on an around-the-clock basis. This 24 hour operation is often impeded by reluctance on the part of some commanders to operate at night in areas where enemy forces have only minor capability. Such reluctance results in a slow down of Engineer effort.

OBSERVATION: When adequate security measures are taken, Engineer operations can be conducted efficiently on an around-the-clock basis with minimum risk.

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15 November 1966

SUBJECT: Operational Report-Losses Learned (RCS CSFOR-65), for Quarterly Period Ending 31 October 1966

### TRACTORS, FULL TRACK/LOGISTICS

ITEM: Design Deficiencies in Tractor

DISCUSSION: HD-16 tractors, full tracked, operating in jungle terrain have experienced considerable damage due to component items hitting brush, vines, broken limbs and large boulders. It is obvious that this equipment was designed to operate in an environment relatively free from such hazards.

OBSERVATION: Component projections such as the grill bracket, exhaust stack, hydraulic filter assembly and tilt cylinder hose are badly damaged in jungle terrain. To effect a solution to this problem, an equipment improvement recommendation has been submitted (Control #743265) to reduce or eliminate component projections described, thereby making the HD-16 more adaptable to operating in jungle terrain.

### RATIONS/LOGISTICS

ITEM: "A" Rations for Isolated Units

DISCUSSION: Units that are broken down below company size are often forced to subsist on "C" rations for several weeks at a time. A shortage of aircraft prevents flying "A" rations in on a daily basis.

OBSERVATION: Battalions should be provided with several small size refrigerators and generators to allow isolated platoon size units to store a 3 - 4 day supply of "A" rations.

### RAIL TRANSPORTATION/LOGISTICS

ITEM: Rail Transportation to Supplement Highway Transportation

DISCUSSION: Because of a heavy burden placed on the MSR between CAM RANH BAY and NINH HOA, 45th Engineer Group arranged for the initiation of rail service between these two areas. The provision of the service to include adequate R&V security, allowed large tonnages to be shipped by rail thereby reducing not only the congestion on the MSR but also the wear on the same roadway.

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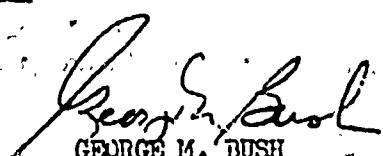
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OBSERVATION: To provide for most efficient transportation of critical tonnages, all means of transport must be exploited.

Section 3, Part II, Recommendations: None

  
GEORGE M. BUSH  
LTC, CE  
Commanding

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AVBC-C (15 Nov 66)

1st Ind

SUBJECT: Operational Report-Lessons Learned (RCS CSFOR-65) for Quarterly Period Ending 31 October 1966

Headquarters, 18th Engineer Brigade, APO 96307

12 DEC 1966

TO: Commanding General, United States Army, Vietnam, ACTN: AVC-DH, APO 96307

1. The subject report, submitted by the 45th Engineer Group (Const), has been reviewed and is considered an accurate report of organizational activities.

2. This headquarters concurs with the commander's observations, with the following comments added:

a. Section 2, Part I, page 4. Indigenous Personnel. All organizations within this command, augment their skilled quarry operating U.S. personnel by utilization of indigenous personnel as required, tactical situation permitting.

b. Section 2, Part I, page 5. Rotational Hump - Personnel. Priority on fill of enlisted personnel, to give a temporary overstrength prior to the rotational hump in units, is practiced by this headquarters, as well as transfer of personnel between units.

c. Section 2, Part I, page 6. Inadequate Communications. The requested radio - teletype equipment is presently being used as back-up equipment for Signal Corps units and are considered critical items. Additional sets are programmed, but there is an expected six months delay before all requests will be filled.

d. Section 2, Part I, page 6-7. Mounted Drills. Current TOE authorization of two wagon drills per quarry set, provides a flexible quarry drilling capability when coupled with the track mounted drill. Each drill has its advantages and disadvantages, one does not replace the other. A request for additional track mounted drills has been approved. 47 drills have been reported as being enroute to the RVN.

e. Section 2, Part I, page 8. Aircraft Support Operations. This headquarters submitted a letter to USARV requesting the organic aircraft requirements be supplemented for operations within RVN, for engineer groups and battalions of the brigade.

f. Section 2, Part I, page 9, Rations. Units are being readvised that they may submit USARV Form 47Rs for the refrigerators and generators if a continuing requirement has developed for isolated platoon sized projects. Otherwise commanders must plan for and aggressively supervise periodic airlifts of rations.

AVBC-C (15 Nov 66)

1st Ind

SUBJECT: Operational Report-Lessons Learned (RCS CSFOR-65) for Quarterly Period Ending 31 October 1966

3. This headquarters publishes each quarter's lessons learned from quarterly reports submitted, in pamphlet distribution to all units of this command.

FOR THE COMMANDER:

*Wayne J. Reynolds*

WAYNE J. REYNOLDS

Major, CE

Adjutant

AVHGC-DH (15 Nov 66)

2d Ind

SUBJECT: Operational Report-Lessons Learned for the Period Ending  
31 October 1966 (RCS CSFOR-65)

HEADQUARTERS, UNITED STA AS ARMY VIETNAM, APO San Franciscos 96307

6144 167

TO: Commander in Chief, United States Army, Pacific, ATTN: GPOP-OT  
APO 96558

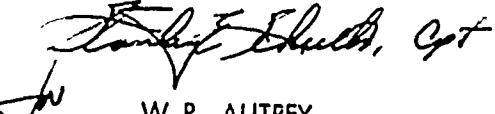
1. This headquarters has reviewed the Operational Report-Lessons Learned for the period ending 31 October 1966 from Headquarters, 45th Engineer Group (Construction) as indorsed.

2. Pertinent comments are as follows:

a. Reference Part 1, Section II, Item: Lack of Aviation Support: Combat Support (CS) and Combat Service Support (CSS) units were deployed from CONUS with no aviation assets. This was necessary because of the critical shortage of aviation personnel and equipment. Until this shortage is alleviated the requirements of combat units must be satisfied before additional aviation assets can be allocated to CS and CSS units.

b. Reference Paragraph 2e, 1st Indorsement: The letter requesting that organic aircraft requirements be supplemented has been staffed by this headquarters. The Commanding General, 18th Engineer Brigade has been informed of the assistance that can be provided by USARV in accordance with existing priorities and resources available.

FOR THE COMMANDER:

  
W. R. AUTREY  
Cpt, AGC  
Asst Adjutant General